## CLAIMS

[1]     A stage device comprising a surface plate, two drive sources for respectively moving two moving bodies in one axis direction on said surface plate, a guide member for guiding at least one of said two moving bodies in said one axis direction, and a beam laid between said two moving bodies so as to be orthogonal to said guide member and to be moved along with said two moving bodies, said stage device characterized by comprising:

two position sensors for respectively detecting positions of said two moving bodies,

two origin sensors for respectively defining origin positions of said two moving bodies, and

a controller for, responsive to detection signals from said two position sensors and said two origin sensors, controlling said two drive sources to thereby perform a position control of said two moving bodies,

wherein said controller has a yaw axis rotation control function of individually controlling said two drive sources to thereby rotate said beam about a yaw rotation axis perpendicular to said one axis direction and, based on said yaw axis rotation control function, said controller performs, at the time of starting said stage device, a control of maintaining an orthogonality of said beam with respect to said guide member within a predetermined range even when the orthogonality of said beam with respect to said guide member changes.

[2]     A stage device according to claim 1, characterized in that said controller comprises a storage unit storing therein a yaw axis rotation control program for performing said yaw axis rotation control function, and

said storage unit stores initial value data of said yaw axis

rotation control program as a target value, wherein said target value is determined by said controller based on the orthogonality of said beam measured while said stage device is stopped, said target value being a correction value $\Delta y1$ necessary for causing the orthogonality of said beam to fall within said predetermined range.

[3]     A stage device according to claim 2, characterized in that said yaw axis rotation control program is for executing:

a step of driving, at the time of starting said stage device, said two moving bodies to positions detected by said two origin sensors in the state where the orthogonality of said beam is changed and calculating a difference $\Delta y3$ between two coordinate data obtained by said two position sensors at that time instant, and

a step of using said correction value $\Delta y1$ and said difference $\Delta y3$ and rotating said beam about said yaw rotation axis by $(\Delta y1-\Delta y3)$.

[4]     A stage device according to claim 3, characterized in that said controller calculates a difference $\Delta y0$ between two coordinate data obtained by said two position sensors when said moving bodies are moved to positions detected by said two origin sensors in the state where said stage device is placed as it is and stores the calculated difference $\Delta y0$ into said storage unit and said controller further determines said correction value $\Delta y1$ based on said calculated difference $\Delta y0$.

[5]     A stage device according to any of claims 1 to 4, characterized in that optical sensors or magnetic sensors are used as said origin sensors.

[6]     A stage device according to claim 5, characterized by comprising two guide members extending in parallel to each other in said one axis direction for respectively guiding said two moving bodies in said one

axis direction,

   wherein said beam has one end fixed to one of said two moving bodies and the other end joined to the other of said two moving bodies through a plate spring structure.